

10 October 2016

The Prize in Economic Sciences 2016

The Royal Swedish Academy of Sciences has decided to award the Sveriges Riksbank Prize in Economic Sciences in Memory of Alfred Nobel 2016 to

Oliver Hart

Harvard University, Cambridge, MA, USA

“for their contributions to contract theory”

The long and the short of contracts

Modern economies are held together by innumerable contracts. The new theoretical tools created by Hart and Holmström are valuable to the understanding of real-life contracts and institutions, as well as potential pitfalls in contract design.

Society's many contractual relationships include those between shareholders and top executive management, an insurance company and car owners, or a public authority and its suppliers. As such relationships typically entail conflicts of interest, contracts must be properly designed to ensure that the parties take mutually beneficial decisions. This year's laureates have developed *contract theory*, a comprehensive framework for analysing many diverse issues in contractual design, like performance-based pay for top executives, deductibles and co-pays in insurance, and the privatisation of public-sector activities.

In the late 1970s, Bengt Holmström demonstrated how a *principal* (e.g., a company's shareholders) should design an optimal contract for an *agent* (the company's CEO), whose action is partly unobserved by the principal. Holmström's *informativeness principle* stated precisely how this contract should link the agent's pay to performance-relevant information. Using the basic principal-agent model, he showed how the optimal contract carefully weighs risks against incentives. In later work, Holmström generalised these results to more realistic settings, namely: when employees are not only rewarded with pay, but also with potential promotion; when agents expend effort on many tasks, while principals observe only some dimensions of performance; and when individual members of a team can free-ride on the efforts of others.

Prize amount: 8 million Swedish krona, to be shared equally between the Laureates.

Further information: <http://kva.se> and <http://nobelprize.org>

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The Royal Swedish Academy of Sciences, founded in 1739, is an independent organisation whose overall objective is to promote the sciences and strengthen their influence in society. The Academy takes special responsibility for the natural sciences and mathematics, but endeavours to promote the exchange of ideas between various disciplines.

Bengt Holmström

Massachusetts Institute of Technology,
Cambridge, MA, USA

In the mid-1980s, Oliver Hart made fundamental contributions to a new branch of contract theory that deals with the important case of *incomplete contracts*. Because it is impossible for a contract to specify every eventuality, this branch of the theory spells out optimal allocations of control rights: which party to the contract should be entitled to make decisions in which circumstances? Hart's findings on incomplete contracts have shed new light on the ownership and control of businesses and have had a vast impact on several fields of economics, as well as political science and law. His research provides us with new theoretical tools for studying questions such as which kinds of companies should merge, the proper mix of debt and equity financing, and when institutions such as schools or prisons ought to be privately or publicly owned.

Through their initial contributions, Hart and Holmström launched contract theory as a fertile field of basic research. Over the last few decades, they have also explored many of its applications. Their analysis of optimal contractual arrangements lays an intellectual foundation for designing policies and institutions in many areas, from bankruptcy legislation to political constitutions.

Oliver Hart, born 1948 in London, UK. Ph.D. 1974 from Princeton University, NJ, USA. Andrew E. Furer Professor of Economics at Harvard University, Cambridge, MA, USA.

<http://scholar.harvard.edu/hart/home>

Bengt Holmström, born 1949 in Helsinki, Finland. Ph.D. 1978 from Stanford University, CA, USA. Paul A. Samuelson Professor of Economics, and Professor of Economics and Management at Massachusetts Institute of Technology, Cambridge, MA, USA.

<http://economics.mit.edu/faculty/bengt>